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These should be, as far as possible, plants which naturally fall within the bounds of daily observation. In case of perennials the same plant should be used for successive years if possible, and of annuals the same location.

For comparison of different localities, data gathered during the same season may be desired, thus requiring cooperative work of several observers. The plants selected would naturally be those of wide geographical distribution, and here we are likely to meet the question of geographical races of a species, or of closely related forms which may be confused. Exchange of seed of the annuals and cuttings of perennials would be desirable. Annuals of common cultivation form a rather distinct group. The time of first flower may be determined very closely by use of the dehiscence of the anther sac, but that of full flower, maturity, etc., offers greater difficulty.

Accurate and complete meteorological data are of course essential. Livingston has suggested the use of the physiological temperature coefficient for the mean daily temperature, but why that of the daily mean? Is it not probable that a more detailed study of the thermograph record is necessary to bring out important relations? Data of soil moisture and snow cover are likely to be found deficient.

It has been suggested recently that the work of Garner and Allard on length of day and night opens a new field of work, but it is difficult to see how this will be applied to plants under natural conditions. From stations at different altitudes (as for instance the work of Sampson, U. S. Dept. Agr. Bull. 700) very different conditions are obtained with similar sunshine. With different latitudes, variations in the other factors also are encountered. Both duration and intensity of sunshine were considered by former workers, notably Marie-Davy.

This brief sketch endeavors to bring out a number of points which should be taken into consideration for further work in this line. The somewhat detailed introduction has seemed necessary to explain the writer's position, and may be useful to others who have not had this particular objective in view. While it may not be deemed advisable to attempt an extensive cooperative project it is hoped that some advance may be made in the value of observations.

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EVAPORIMETERS

In the Monthly Weather Review for May, 1919, I described an attempt to develop an evaporimeter or atmometer possessing more sturdy features than the instruments previously available, simple in its operation, susceptible to use under all weather conditions and at all seasons, and embodying a principle of construction which would insure an integration of the several external factors influencing evaporation in a manner more nearly corresponding to the way the leaf is influenced through its relative sensitivity to sunlight, and its relative immunity to wind. The results of my efforts were an all-metal instrument about 8 inches high, weighing about 1¼ pounds, giving an evaporation under the greatest stress of about 40 c.c. per day from a horizontal surface of 100 sq. cms., and having sufficient tank capacity for a month's operation under average conditions. The daily, weekly or other evaporation losses are measured by weighing, since the volumetric method would be entirely unsatisfactory for the small changes sometimes involved. Because of the relatively small changes, a balance of a sensitivity of .01 gram should be used when short periods are involved, but for the usual daily or weekly observations the well-known Harvard trip scale, with weights from 1 gram to 500 grams, is quite satisfactory. A scale will, of course, be required, in each locality studied, unless it is more convenient to have substitute evaporimeters to carry into the field.

Since my article was prepared two years ago, no change has been made in this evaporimeter, but an increasing number of calibrated instruments has been in operation, both under my own care and that of several other persons. I regret that I have been unable to ask for reports from those besides myself who have used the instrument, but my own experience has been more satisfactory than my most optimistic hopes. The small amount of care which is necessary to secure a continuous record of evaporation is the best evidence of the practical utility of the instrument. It is to be noted that *distilled water must always* be used, that the instrument must be kept reasonably clean, and that the wicks must be freshened, and the instrument recalibrated about twice a year—perhaps oftener in a very dry atmosphere or when exposed to much dust. On recalibration the rate usually comes back to its original relation to the standard, but there are conditions of adjustment, still imperfectly understood, which may change the coefficient of the individual instrument each time that it is freshened. With the observance of these few rules it would seem possible for anyone to secure just as satisfactory results as I have had.

Since many feel that the evaporation rate is the simplest means for integrating those atmospheric conditions of the habitat which most vitally affect plants, and since the integration of sunlight, atmospheric humidity, temperature and wind movement, in their proper proportions, as they affect the transpiration of the plant, is essential to a correct comparison of different habitats, it seems desirable to make this new evaporimeter available to ecologists as generally as possible, in my belief that it sums up the habitat conditions, not perfectly, of course, but in a better manner than other similar instruments. My own studies, also, have impressed upon me the necessity of year-long observation of habitat conditions, and while it is possible that the conditions and plants I have studied overemphasize the importance of the winter period in ecological relations, still I believe it very essential that ecologists generally should give this period more serious attention. The evaporimeter which I describe was really called for to meet winter conditions.

For these reasons I have personally undertaken responsibility for the manufacture, calibration and distribution of the "inner-cell wick" evaporimeters until a more satisfactory arrangement can be made. The patent for the instrument is dedicated to the public, meaning that anyone is at liberty to make and sell it. My only idea in this undertaking is to make available calibrated instruments by which comparable records may be obtained in all parts of the country. Each instrument issued or recalibrated will be compared under out-door conditions with the original standard instrument at the Fremont Experiment Station, and every effort will be made to maintain the original condition of the standard. The writer will undertake to supply new instruments and to re-calibrate used ones as promptly as possible and within the limits of his available time.

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Proposed Joint Conservation Committee

The Conservation Committees chosen by the National Academy of Science, the National Research Council, and the American Association for the Advancement of Science met in joint session under the chairmanship of Dr. J. C. Merriam in New York on April 9th. A broad point of view was taken, and a resolution unanimously passed recommending the formation of a continuing joint committee and the selection of an executive agency to devote its entire time to this subject. Full information on this important step and its future development will appear in Science.